肯蚖属 (原尾目、檗蚖科) 的五新种和一新记录^{*}

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肯蚖属 (Kenyentulus) 是Tuxen1981年新分立出来的一个属,原归格蚖属 (Gracilentulus), 现已知共有7种, K.kenyanus (Condé 1948) 分布于东非、塞舌尔、印度南部和巴西等地, K.condei (Prabhoo 1975)在印度南部, K.japonicus (Imadaté 1961) 和K. sakimori (Imad. 1977) 均分布于日本, 而其余三种 K. malaysiensis (Imad. 1965), K.ohyamai (Imad. 1965)和K.sanjianus (Imad. 1965)则分布于东南亚一带。

自1973年以来,先后自云南西双版纳,西藏墨脱以及山西、河北、河南等地采得的原尾虫标本中,共有7种肯蚖,除大同肯蚖(Kenyentulus datongensis Imad. & Yin 1982) 已另文报导外,现将其余5个新种和1个新记录分别记述如下,模式标本均保存于中国科学院上海昆虫研究所。

1. 動龙肯蚖 Kenyentulus monlongensis 新种 (图1-9)

全长1090徽米。头长115徽米,宽83徽米。下唇须由3根刚毛和1个感觉器组成。颚腺基长大,腺管上的粤为光滑的心形,远端有1或2个突起,由粤至盲端的腺管细长,其间有二处稍膨大,盲端不分枝也不膨大。假眼卵形,12×10微米,头眼比=9.6。

前跗长86微米,爪长26微米,跗爪比=3.3、中垫长3.2微米,垫爪比=0.12。背面感觉刚毛 t — 1 數極形,基端比=0.5。 t — 2 细长, t — 3 芽形。 外侧感觉刚毛 a 粗大,长约25微米,顶端可达 Y 3基部, b 较短,9 —10微米, c 与 d 长度相仿,19—20微米, e 长13—14微米, f 近 e 且较长, g 长11—12微米,顶端可达爪的基部。内侧感觉刚毛a'中部略膨大,长16—17微米, b' 稍长, c' 最长,约19—20微米。中跗与后跗长度相仿,38—39微米,爪长20—22微米。

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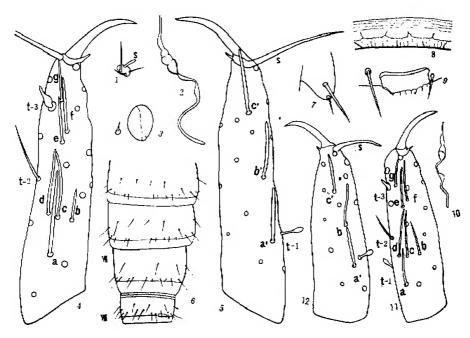


图 1 - 9 動龙青螺 (Kenyentulus monlongensis Yin) 新种

1.下居須 2.振陳 3.根限 4.前衛节外側面項 5.前衛节内側面項 6.康都▼一種节背面毛序

7. 第三腹足 8. 第四节腰带(纵枚带) 9. 标提

图10-12 三治肯妮(Kenyentulus sanjianus (Imad. 1965))新记录

10.預除 11. 萬點节外側面流 12. 前瞻节内侧面观

胸、腹部毛序见以下简表:

	M I	$\mathbf{I} - \mathbf{I}$	腹I	I - I	$\mathbf{N} - \mathbf{M}$	M	W	X	X	X	M
背面	4	16	$\frac{6^{a)}}{12}$	18b)	18b)	16°)	6-8 8	12	?	?	9
腹面	<u>4-2</u>	$\frac{7-2}{4}$	$\frac{3}{4}$	<u>3</u> _	3	3-8	-4-0	4	4	6	6

性: a) A 1 -2·5 b) 有p1 c) A2·4·5

第Ⅰ—Ⅱ对腹足均为1节,各生削毛2根,顶端削毛的长度小于次顶端削毛之半。 腹部Ⅱ—Ⅵ节背板后排削毛生有p1″与p1″平排。第覆节的腰带(纵纹带)上,有一排排 成波浪形的小刺,后半段为排列齐整的纵纹。栉梳长方形,后缘略凸出并生8—9枚尖 齿。雄性外生殖器正常,雌虫未发现。

正模: 1c⁷, 勐龙 (云南西双版纳) 1973, II-3, 海拔800m, 金根挑采。

讨论, 动龙肯蚖个体很大,腹部 I - VI节背板生有 p1'' 刚毛, 这与已知肯蚖的种类全不相同。

2.三治肯啶Kenyentulus sanjianus (Imad. 1965)新记录 (图10-12)

同种异名, Gracilentulus sanjianus Imadatė 1965

全长825微米。头长100微米,假眼圆形,8×8微米,头眼比=12.5。颚腺管上的 萼简单,近基部腺管细长,有2处稍膨大。雌虫峡前跗,若虫的前跗长58微米,爪长18 微米, 跗爪比=3.2。

成虫毛序见下式:

采集地点: 1 年, 云南勒龙, 1973, Y-6, 700米, 1m.j.云南勒崙, 1973, Y-9, 680米, 金根桃采

分布, 婆罗洲 (汶莱), 中国云南。

3.景洪省虹 Kenyentulus jinghongensis 新种 (图13-20)

全长570—670微米。头长80—88微米,宽70微米;下唇须为3刚毛和1感器。颚腺管上的萼简单,远侧有2—3个突起,近基端腺管上有2个膨大部分,盲端稍膨大。假 服卵形、 8×7 微米,头眼比=10。

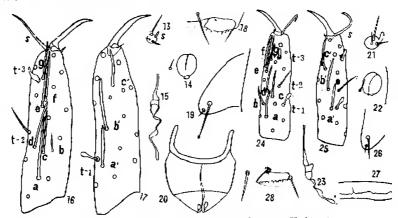


图13-20 景铁青虹 (Kenyentulus jinghongensis Yin) 新种

13。下居须 14。便服 15。银腺 16。前勤节外侧面观 17。前勤节内侧面观

18. 栉槐 19. 第三版足 20. 单性外生殖器

图21-28 小青螺 (Kenyentulus minys Yin) 新种

21.下階類 22.假服 23.彩腺 24.前銷节外側面頭 25.前鉤节内側面膜 26.第三直足 27.將覆节膜带 28.栉稿

前跗长51微米,爪长16微米,跗爪比=3.2,中垫长2-3微米,垫 爪比=0.12-0.18。背都感觉刚毛 t-1 敢锤状,基端比=0.5。 t-2 尖细,t-3 火焰状。外侧感

觉刚毛 a 甚长,约18—19微米,顶端可达γ3基部;b 甚短,仅5—6微米, c 和 d 的长度约相等,14—15微米, e 和 f 长度亦相仿,15—16微米, g 较短,11—12微米,顶端略超过爪的基部。内侧感觉刚毛a′与c′长度约相等,12—13微米,b′ 较长,约16—17微米。中跗长20微米,爪长10微米,后跗长23微米,爪长11微米。

胸、腹部毛序如下式:

胸 I I 腹 I I—I IV—VI VI VI X X X X XI XI 有面 4
$$\frac{6}{16}$$
 $\frac{6}{16}$ $\frac{6a}{12}$ $\frac{6a}{16}$ $\frac{6a}{16}$ $\frac{6a}{16}$ $\frac{6b}{16}$ $\frac{6(4)c)-8}{8}$ 14 12 10 9 腹面 $\frac{4-2}{6}$ $\frac{5-2}{4}$ $\frac{7-2}{4}$ $\frac{3}{4}$ $\frac{3}{5}$ $\frac{3}{8}$ $\frac{3}{8}$ $\frac{4}{0}$ 4 4 6 6

性: a) A1·2·5 b) 2·4·5 c) A2·4·5 (A4·5)

第**亚**腹节后部有5 — 6 条横向的线纹,每条线纹似由极微小蕨齿联成。第**亚**节的腰带退化,看不到明显的纵纹,中部有一排小齿排成波浪形,栉梳后缘生6 — 7 不规则尖齿。雌性外生殖器的端阴刺尖形,雄虫未发现。

全模, 2 ♀, 景洪, 1973, Ⅱ-25, 750米, 金根桃采。

讨论:这一新种和马来肯妮 K. malaysiensis 相近,但可由假眼的形状,颚腺各部分的比例以及腹部 V — VI 节和 VII 节背板毛序不同来区别。

4.小肯虹 Kenyentulus minys 新种 (图21-28)

全长550—640徽米。头长74—80徽米,宽54—56徽米,下唇须为 3 刚毛和 1 魑器。 颚腺管上的粤简单,其基侧腺管上有两个膨大处, 盲端稍膨大。 假眼桃形,长 7 — 8 微米,宽 6 微米,头眼比=10。

前跗长40-42微米,爪长14.5-16微米,跗爪比=2.5-2.8。背面感觉刚毛 t-1 鼓捶形,基端比=0.56-0.66。 t-2 尖细, t-3 矛形。外侧感觉刚毛 a、c和d长度相近,11-12微米,b 较短 7-8 微米,e 长约12-13微米,f 近 e 而稍长, 8 约10微米。内侧感觉刚毛a′与b′均粗蚀,b′长约13-14微米,c′长14-15微米,末端可达爪的基部。中跗长15-19微米,爪长10-13微米,后跗长16-20微米,爪长12-13微米。

胸、腹部毛序见下式:

注: a)A1·2·5 b)A1·2·5(-A1+Ac) c)A2·4·5 d)(+p1') e)(-M1+Mc)

腹部 V — TT 背板刚毛,在不同标本上有些变化。第 TT 节腰带上的纵纹不明显,只有一排小齿,呈波浪形。栉梳斜方形,后缘生尖齿10—12枚, 雌性外生殖器具尖锥状端阴刺,雄虫未发现。

全模: 4 ♀, 云南勐它, 1973, Ⅱ-19, 680米, 金根桃采。

讨论: 小肯蚖与日本肯蚖 (K. japonicus) 和肯尼亚肯蚖 (K. kenyanus) 均较相近, 但形体微小, 前跗特短以及毛序和各部分比例均不相同。

5.河南肯蚖 Kenyentulus henanensis 新种 (图29-34)

全长750—800微米。头长72—78微米,宽58—62微米。颚腺管纤细,萼呈心形,小而光滑,其远端腺管上有许多大小不一的突起,而萼的基端腺管上有 2 个膨大部分,近盲端的一段腺管较粗,盲端稍膨大成球形。假眼椭圆形,有中隔,9×7微米,头眼比=8.5—8.7。

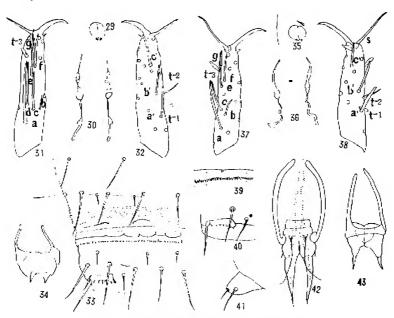


图29-34 河南背駅 (Kenyentulus henonensis Yin) 新种

29. 假果 30. 頻廉 31. 前附节外侧面观 32. 前跗节内侧面观 33. 膜部第**恒一面**节背画观 34. 单性外生殖器 图35—43 显脱背蚖(Kenyentulus medogensis Yin新种

35.假服 36.颚腺 37.前跗节外侧面观 38.前跗节内侧面观 39.第11节腰带的一段

35.假联 36.發展 37.翻新节外獨國观 35.別賦予內獨國观 35.別賦予內國 35.財

前跗长48—54微米,爪长14—15微米,跗爪比=3.5—3.6; 中垫甚长, 4—5 微米,垫爪比=0.3—0.5。背部感觉刚毛 t—1 戴槌形,基端比=0.5—0.6。 t—2 尖细, t—3 叶芽形。外侧感觉刚毛 a 极长大,24—26微米,顶端可达 f 的基部, b 短而尖细,5—6 微米,顶端仅及 Y2 的基部,c与d 均细长,16—18微米,顶端超过 f 的基部,e、f 长度相仿; g 较短,10—11微米。内侧感觉刚毛 a'、b' 和 c' 均较粗钝,长约13—14微米。中跗长20—23微米,爪长10—12微米;后跗长24—25微米,爪长10—14微米。

胸、腹部毛序见以下简式:

往: a) A1·2·5 b) A2·4·5

第**亚**节后都具有横行的线纹 5 — 6 条,每根线纹似由极微小的点状小棘联贯而成。 第**亚**节的腰带未见有纵纹,而其后缘有一排细密的浅齿。栉梳扁长,后缘生 4 — 6 个不规则的尖齿。雌性外生殖器基内骨细弱,端阴刺尖锥形,雄性外生殖器正常。

全模. $2 \circlearrowleft$, 河南登封, 1982, $\mathbb{K}-1$, $1 \circlearrowleft 1 \checkmark$, 河南洛阳, 1982, $\mathbb{K}-5$ 。张之源、杨毅明采。

讨论:本新种与大同肯蚖 (K. datongensis Imad. & Yin 1982) 很相近, 但二者的颚腺形状不同, 栉梳的齿数不同, 头眼比值和跗爪比值等均不相同。

6. 星脱肯蚖 Kenyentulus medogensis 新种 (图35-43)

全长640—780微米。头长72—74微米,宽50—60微米。颚腺管细长,萼小而光滑,近基部腺管上有 3 个膨大部分,盲端不膨大。假眼圆或扁圆形,宽稍大于长,约 6×7 或 7×8 微米,头眼比=10—11。

前跗长45-47微米, 爪长17-20微米, 跗爪比=2.3-2.6, 中垫长2微米, 垫爪比=0.1, S毛长于爪长。背部感觉刚毛 t-1 鼓槌形, 基端比=0.65。 t-2 尖细, t-3 较长, 矛形。外侧感觉刚毛 a 甚长大, 20-22微米, b 较短, 8-10微米, 顶端超过 Y 2, c 细长, 13-15微米, d 未观察到, e 较短, 9-10微米, f 顶端可达爪的基部, g 短而稍膨大。内侧感觉刚毛a′与b′粗钝, c′较短而细。中跗与后跗均长24微米, 爪长12-13微米。

胸、腹部毛序见下式。

注: a)A1·2·5 b)A2·4·5 c)A1·2·4·5(-1,+c), M1·2·3(+5)

第刊节后部有横向线纹 5 - 6 条, 第刊节腰带无明显纵纹, 中部有一排 细 密 的 尖齿。栉梳细长,后缘生 6 - 7 细齿。雌性外生殖器的基内骨甚长大,端阴刺尖锐,雄性外生殖器基内骨粗大,端阳刺粗壮,在基节的脊腹面各生一对极为细长的刚毛,其末端超过端阳刺的中部。

全模, 2♂,2♀, 西藏墨脱,1980, 〒—6和 〒—13,1050—1230米,金根桃采。 讨论:墨脱肯蚖与小肯蚖相近,但二者的前跗感觉刚毛 a 的相对长度不同,后都腹节的毛序不同,此外,栉梳的形状与齿数,以及外生殖器等亦均有区别。

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FIVE NEW SPECIES AND A NEW RECORD OF THE GENUS KENYENTULUS (PROTURA, BERBERENTOMIDAE)

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Seven species of Kenyentulus have been collected from Yunnan, Xizang (Tibet), Shanxi, Hebei and Henan Provinces since 1973. One of them, K. datongensis was described by Imadate and Yin in 1982, and the other six species are summerized as follows:

1. Kenyentulus monlongensis Yin, sp. nov. (Figs. 1-9)

Total length 1090 μ . Head 115 x 83 μ , labial palp with 3 setae and a sensilla. Canal of maxillary gland with 2 dilatations along the proximal part, without terminal dilatation. Pseudoculus oval, about 12 x 10 μ , PR=9.6.

Foretarsus 86 μ in length, claw 26 μ , TR=3.3, empodium 3.2 μ long, EU=0.12. Dorsal sensilla t-1 baculiform, BS=0.5, t-2 thin and t-3 bud shape. Exterior sensillae a long and thick, 25 μ in length, the apex reaching to the base of $\gamma 3$, b short, 9-10 μ , c subequal to d in length, 19-20 μ , e about 13-14 μ and f close to e but longer, g about 11-12 μ . Interior sensillae a' slightly broader in the middle part, 16-17 μ long, b' a bit longer than a'; c' is the longest, 19-20 μ . The mid- and hind-tarsus are subequal in length, 38-39 μ , and claw 20-22 μ long.

Chaetotaxy is tabulated in the Chinese text. The posterior setae on tergite II—VI have an extra pl", which is different from all the known species of this

genus. The striate band of the M abdominal segment with short striae on the posterior half, and waved line of minute denticles. The comb fringed with 8-9 sharp teeth.

Holotype: 1 of, Monlong, Yunnan Prov., 3-1973, 800m alt., collected by Mr. G. T. Jin.

2. Kenyentulus sanjianus (Imadaté 1965), new record (Figs. 10-12)

Syn. Gracilentulus sanjianus Imadate 1965

Total length 825 μ in mature female. Head 100 μ in length, pseudoculus circular 8 x 8 μ , PR=12.5. Along the proximal canal of maxillary gland with 2 dilatations. Foretarsus of maturus junior 58 μ in length, claw 18 μ , TR=3.2.

Collecting sites: 1 \(\text{, Monlong, Yunnan Prov., 6-\frac{11}{11}-1973, 700m; 1 m.} \)
j., Monlun, Yunnan Prov., 9-\frac{11}{11}-1973, 680m alt., by G. T. Jin.

Distribution: Borneo (Brunei), China (Yunnan)

3. Kenyentulus jinghongensis Yin, sp. nov. (Figs. 13-20)

Total length 570-670 μ . Head 80-88 μ in length, 70 μ in width, Calyx on the canal of Maxillary gland simple, its distal canal with 2-3 irregular protuberances, and along the proximal canal with 2 dilatations and slightly enlarged in the blind end. Pseudoculus oval, 8 x 7 μ , PR=10.

Foretarsus 51 μ long, claw 16 μ , TR=3.2; empodium 2-3 μ , EU=0.12 -0.18. BS=0.5. Exterior sensillae a rather long, 18-19 μ ; bvery short, only 5-6 μ ; c and d, e and f subequal in length, 14-16 μ ; g 11-12 μ long. Interior sensillae a' and c' subequal in length, 12-13 μ ; b' 16-17 μ . Midtarsus 20 μ in length, claw 10 μ ; hindtarsus 23 μ and claw 11 μ .

On posterior part of abdominal segment **M**, there are 5-6 transverse lines, which resemble strings of tiny denticles. Striate band on abdomen **M** reduced, striate invisible, but a waved line of minute denticles. Comb armed with 6-7 irregular teeth.

Syntype: 29, Jinghong, Yunnan Prov., 25-11-1973, 750m alt., by G. T. Jin.

Notes: This species is closely related to K-malaysiensis, but it is distinguishable by the shape of pseudoculus, the maxillary gland and the chaetotaxy of tergite V - V and W.

4. Kenyentulus minys Yin, sp. nov. (Figs. 21-28)

Total length $550-640~\mu$. Head $74-80~x~54-56~\mu$. The proximal canal of maxillary gland with two dilitations and slightly swelled in the blind end. Pseudoculus peach shaped, $7-8~x~6~\mu$, PR=10.

Foretarsus 40—42 μ in length, claw 14—16 μ , TR=2.5—2.8. BS=0.56 —0.66. Exterior sensillae a, c and d subequal in length, 11—12 μ ; b short,

7—8 μ ; e about 12—13 μ ; f near to e but longer, g about 10 μ long. Interior sensillae a' and b' stout and c', about 14—15 μ in length.

Chaetotaxical variations are not rare in this species. Striate band on abdomen without striae, but a waved line of denticles. Comb oblique squarish in shape and fringed with 10—12 sharp teeth.

Syntype: 42, Monlun, Yunnan Prov., 19-11-1973,680m alt., by G. T. Jin.

Notes: This new species resembles bothto K. japonicus and K.kenyanus, but much smaller and different in cheatotaxy and the ratio of different parts.

5. Kenyentulus henanensis Yia, sp. nov. (Figs. 29-34)

Total length 750-800 μ. Head 72-78 x 58-62 μ. Canal of maxillary gland very thin, with heart-shaped calyx, which is simple and smooth, but with several protuberances at its distal canal, the proximal canal with 2 dilatations and thickened from the 2nd dilatation to the blind end, which slightly enlarged into a small ball. Pseudoculus elliptical, 9 x 7μ, PR=8.5-8.7.

Foretarsus 48-54 μ in length, claw 14-15 μ , TR=3.5-3.6; Empodium very long, 4-5 μ , EU=0.3-0.5, BS=0.5-0.6. Exterior sensillae a very long and stout, 24-26 μ , its apex reaches to the base of f_i b short and thin, 5-6 μ ; c and d are long 16-18 μ ; e and f subequal in length, g about 10-11 μ in length. Interior sensillae a^i , b^i and c^i are all stout, about 13-14 μ long. Midtarsus 20-23 μ long, and claw 10-12 μ ; hindtarsus 24-25 μ , claw 10-14 μ .

The posterior part of abdomen **W** with 5-6 transverse lines as in K. jinghongensis. The striate band of abdomen **W** without striae but a raw of fine teeth along the posterior margin. The comb armed with 4-6 irregular teeth.

Syntype: 2♀, Dengfeng, Henan Prov., 1—K—1982; 1♀ 1♂, Luoyang, Henan Prov., 5—K—1982; by Y. M. Yang.

Notes: This new species is closely related to K. datongensis, but it is distinguishable by the shape of maxillary gland and the number of teeth on the comb, and the ratio of PR and TR.

6. Kenyentulus medogensis Yin, sp. nov. (Figs. 35-43)

Total length 640—780 μ . Head 72—74 x 50—60 μ . Proximal canal of maxillary gland with 3 dilatations and not enlarged in the end. Pseudoculus circular or elliptical, 6 x 7 μ or 7 x 8 μ . PR=10—11.

Foretarsus 45—47 μ in length, claw 17—20 μ . TR=2.3—2.6; empodium 2 μ in length, EU=0.1. BS=0.65. Exterior sensillae a long and stout 20—22 μ ; b short, 8—10 μ , the apex surpasses the base of γ 2; c long 13—15 μ ; d not observed; e comparatively short; f long and thin, g short and stout. Interior

sensillae a' and b' stout, c' short and thin. Mid-and hind-tarsus 24 μ in length and claw 12-13 μ .

There are 5-6 fine lines on the posterior part of abdomen W. In the middle of the striate band a line of sharp teeth on abdomen W. The comb with 6-7 small teeth. Female genitalis with strong and long apodemi, the styli sharp and long; on the basal segment of the male genitalia with a pair of long hairs.

Syntype: 24, 25, Medog, Xizang (Tibet) Prov., 6 and 13—W1—1980, 1050—1230 m alt. by G. T. Jin.

Notes: This new species is closely related to K. minys, but it is different in relative length of sensilla a, the cheatotaxy on the posterior part of abdomen, and the number of teeth on the comb as well as the outer genitalia.